# An Approach to Defining the Core Set of Environment Statistics

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UNITED NATIONS STATISTICS DIVISION

# Disclaimer

This exercise is one of many possible approaches to defining the core set of environment statistics. Based on a selection of international and regional sources of environmental indicators, it is not intended as a suggestion for a revised FDES or as a proposal of a core set of statistics, nor is it meant to duplicate the work done by Eurostat in this field. Its primary purpose is to complement such work by adding some of the regional initiatives (e.g., UN regional commissions, ECOWAS, CARICOM).

# The Starting Point: CSD Indicators of Sustainable Development

- The basis is the 3rd edition of the CSD indicators of SD (2007)
- This edition adopted a 'thematic framework' with 14 themes and 44 sub-themes
- Out of 14 themes, 6 have been found to be clearly environmentally-related, one partially
- For other themes, secondary linkages to environment could be established

# Why Have We Chosen This Starting Point?

- Comprehensive, 'big picture', not too focused
- Based on an 'agreed language', perceived as 'politically neutral'
- Relatively recent (2007)
- Thematic, 'policy-friendly' framework
- No reference to a PSR framework or any of its derivatives, unlike its previous versions
- A good starting point regardless of what approach to defining FDES is taken

| CSD Theme | CSD Sub-Theme | CSD Indicator |
|---|---|---|
| Natural hazards | Vulnerability to natural hazards | Percentage of population living in hazard prone areas |
| | Disaster preparedness and response | Human and economic loss due to natural disasters |
| Atmosphere | Climate change | Carbon dioxide emissions |
| | | Emissions of greenhouse gases |
| | Ozone layer depletion | Consumption of ozone depleting substances |
| | Air quality | Ambient concentration of air pollutants in urban areas |
| Land | Land use and status | Land use change |
| | | Land degradation |
| | Desertification | Land affected by desertification |
| | Agriculture | Arable and permanent cropland area |
| | | Fertilizer use efficiency |
| | | Use of agricultural pesticides |
| | | Area under organic farming |
| | Forests | Proportion of land area covered by forests |
| | | Area of forest under sustainable forest management |
| | | Percent of forests trees damaged by defoliation |
| Oceans, seas and coasts | Coastal Zone | Percentage of total population living in coastal areas |
| | | Bathing water quality |
| | Fisheries | Proportion of fish stocks within safe biological limits |
| | Marine environment | Proportion of marine area protected |
| | | Marine trophic index |
| | | Area of coral reef ecosystems and percentage live cover |

| CSD Theme | CSD Sub-Theme | CSD Indicator |
|---|---|---|
| Freshwater | Water Quantity | Proportion of total water resources used |
| | | Water use intensity by economic activity |
| | Water Quality | Presence of faecal coliforms in freshwater |
| | | Biochemical oxygen demand in water bodies |
| | | Wastewater treatment |
| Biodiversity | Ecosystem | Proportion of terrestrial area protected |
| | | Management effectiveness of protected areas |
| | | Area of selected key ecosystems |
| | | Fragmentation of habitats |
| | Species | Change in threat status of species |
| | | Abundance of selected key species |
| | | Abundance of invasive alien species |
| Consumption and production patterns* | Waste generation and management | Generation of hazardous wastes |
| | | Waste treatment and disposal |
| | | Generation of wastes |
| | | Management of radioactive wastes |
| | Energy use | Annual energy consumption |
| | | Intensity of energy use |
| | | Share of renewable energy sources |

* Within the broader theme of Consumption and production patterns, only energy and waste management are environmentally related.

| CSD "Themes" | CSD "Sub-Themes" | 12 Provisional Themes |
|---|---|---|
| Natural hazards | Vulnerability to natural hazards | **Natural hazards** |
| | Disaster preparedness and response | |
| Atmosphere | Climate change | **Climate change** |
| | Ozone layer depletion | **Atmosphere** |
| | Air quality | |
| Land | Land use and status | **Land** |
| | Desertification | |
| | Agriculture | **Agriculture** |
| | Forests | **Forests** |
| Oceans, seas and coasts | Coastal zone | **Coastal and marine environment** |
| | Fisheries | |
| | Marine environment | |
| Freshwater | Water quantity | **Freshwater** |
| | Water quality | |
| Biodiversity | Ecosystem | **Ecosystem** |
| | Species | **Species** |
| Consumption and production patterns | Waste generation and management | **Waste** |
| | Energy use | **Energy** |

# The 12 Themes

- **Natural hazards**
- **Climate change**
- **Atmosphere**
- **Land**
- **Agriculture**
- **Forests**

- **Coastal and marine environment**
- **Freshwater**
- **Ecosystem**
- **Species**
- **Waste**
- **Energy**

# Indicator Sources

CARICOM

Division of Sust Dvpt (3rd revised)

ECLAC

ECOWAS

EEA

EECCA

ESCAP

ESCWA

EUROSTAT structural indicators (SI)

EUROSTAT sust dvpt indicators (SDI)

FAO

FAO desertification

FAO SOFIA

FAO Status and trends of mangrove…

FAO Yearbook of fishery statistics

IPCC

Millennium Development Goal Database

NEPAD

OECD Environmental Compendium

OECD Environmental Indicators

UNEP- GEMS water quality

UNEP Ozone

UNEP/GEO

UNEP-BASEL

UNEP-ROWA

UNEP-WCMC

UNFCCC

UN-HABITAT

UNSD

WHO

WHO bathing waters

WHO/UNICEF

WMO

WORLD BANK

# Inventory and Distribution of Indicators

| Themes | No of indicators |
|---|---|
| Natural hazards | 37 |
| Climate change | 74 |
| Atmosphere | 92 |
| Land | 50 |
| Agriculture | 139 |
| Forests | 157 |
| Coastal and marine | 218 |
| Freshwater | 282 |
| Ecosystem | 33 |
| Species | 62 |
| Waste | 81 |
| Energy | 97 |
| Total | **1322** |

# Some Conclusions

- The 34 sources provide an extensive bank of indicators
- There are many other sources
- Many duplications and repetitions, mainstreaming easy in most cases
- Different levels of detail, disaggregating and scope complicates such work
- Some of the 12 themes could be combined or otherwise re-arranged (e.g., climate change and atmosphere, ecosystem and species, land and agriculture, etc.)

# Next Steps

- **Select** the most common/relevant/important "core" indicators from the 34 sources
- **Identify** the underlying **core set of statistics** needed to calculate these indicators
- **Refine** the core set of statistics based on their properties (e.g., relevance, coverage, measurability, data availability, etc.)
- **Match** these statistics with the revised FDES to identify gaps and assess whether they can be filled
- **Circulate** the draft core set of statistics to the Expert Group for comments and inputs prior to the next meeting